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A · JOURNEY · TO · THE EARTH'S · INTERIOR



OR · HAVE · THE · POLES · REALLY · BEEN · DISCOVERED

BY MARSHALL B. GARDNER



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A Journey to the Earth's Interior

— OR —

Have the Poles Really Been Discovered



By
MARSHALL B. GARDNER



Profusely Illustrated



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DEDICATED TO THE CON-
TINUED PROGRESS OF
SCIENCE AND THE SERV-
ICE THAT IT CAN RENDER
TO HUMANITY





Marshall B Gardner

AUTHOR OF THE THEORY OF A CENTRAL SUN WITHIN
THE EARTH'S INTERIOR

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Introduction

THE man whose acquaintance with cosmogony and physiography is confined to what he learned in school and, perhaps, afterward read in popular publications, has certain very definite notions about the shape of the earth and the constitution of its interior. These notions, he thinks, are based upon the proven discoveries, or the impregnable theories of the scientists, and so he accepts them in blind faith. But the scientists themselves do not rest under the impression that they have solved every mystery that is buried in the bowels of the earth. While they hold to a general theory about the shape and constitution of the earth, that it is a rigid solid—a theory which is now beginning to supersede the earlier theory that it was a shell with a liquid interior—they admit that there are many questions raised by recent observations of facts which cannot be explained by their present theory.

To the scientist, then, and also to the layman whose interest and encouragement may do so much for scientific advancement, when he sees in what direction it is tending and what results it may have, are the following pages addressed. In them will be found a recital of certain well known and fully authenticated facts of geography, exploration, and astronomy which have not

been satisfactorily explained by any of the theories of the shape and constitution of the earth so far held. Then, on the basis of these facts, a new theory is presented which I claim does explain them; does make them fit in with the accepted results of scientific investigation, and which does not conflict with any other relative facts in the world, but unites them all in an intelligible manner.

WANTED — A FAIR HEARING

In any such attempt as this, two tendencies have to be overcome before an author can secure a fair hearing. The first is the conservatism of scientists who do not care to revise their theories—and especially when that revision is made necessary by discoveries which are made independently of the great universities. I think, however, that the array of confirmatory evidence which I have brought to bear upon my position will be sufficient to counteract this conservatism and induce scientists to give my theory a respectful hearing and full discussion. The second adverse tendency which must be overcome is the erroneous notion of the general public that a scientific theory or hypothesis is, in reality, a final truth that must not be denied. The layman imagines that the scientists have some mysterious means of discovering the actual truth, and that once discovered it is final. In

this matter of the composition and shape of the earth, for instance, he thinks that the scientists actually know that the earth is a ball of a certain density and composition. Only a short time ago, however, the scientists thought that the earth was a solid shell with a liquid interior—and any layman would have sworn this was true just because the scientists imagined it. Now the real fact of the matter is—and any scientist will admit it—that a scientific theory, such as either of the two just mentioned, does not represent an ultimate truth. It is simply an essay of the imagination to weld certain facts, which are not apparently related, into some sort of connection. For instance, we have the facts of gravitation, electricity and light, all acting through great spaces—and all having what are apparently common properties. To explain their action the scientists build up theories of wave motion through the ether. Now the layman accepts the luminiferous ether as a finality. But the scientist might discover some fact tomorrow which could not be explained on that assumption of a universal ether, and so he would have to construct a new theory more comprehensive than his former one, and which would make room for the new fact. I do not imply that such a theory is either likely or possible, but I simply give this as a convenient example of the same thing which I have done in the domain of cosmology. And

my point is, that a theory is good so long as it gives us such a view of the matter as will enable us to discover new facts, but good for that purpose only.

AN ADVANCE ON COPERNICUS

The Copernican system of astronomy was a step in advance of the Ptolemaic system just because it enabled scientists to discover many new facts about the solar system which the error of the old view had hidden from their gaze. My own theory adds to the valuable results gained by the Copernican system, not by subverting it—for I imagine that no sane person would now try to do that—but by accepting it fully, and adding to it a different theory of the evolution of the several planets from their nebulae, and from this new theory of evolution deducing certain presumptions about the interior of the earth. These presumptions I have supported by a wealth of facts discovered by the telescopic observations of astronomers of nebulae and one of our sister planets, Mars, and made by explorers of the most fascinating parts of our own planet—the polar regions.

THE AUTHOR.

Aurora, Illinois, July, 1913.

A Journey to the Earth's Interior

—OR—

Have the Poles Really Been Discovered

MY OWN theory of the constitution and interior of the earth can best be understood by contrasting it with the two older theories. The first of these is that the earth is a mere shell of solid matter enclosing a vast body of material which is still at a sufficiently high temperature to retain its liquid condition.

The strongest argument for this theory is the fact that volcanoes spout up molten lava which scientists supposed were fair samples of the materials which were seething and boiling in the earth's interior. As against this idea we may urge the decisive fact that the earth has attained its present state without being torn to pieces. For if only a gradually forming crust separates the surface from this boiling ocean and confines it in the sphere except at a few volcanic points, one would naturally suppose that—at least in the days when the crust was thinner—the attraction of the moon would cause tides in that inner ocean which would burst through the crust as quickly as it formed. But I adduce this argument mainly for the benefit of the layman who imagines that that theory represents the final

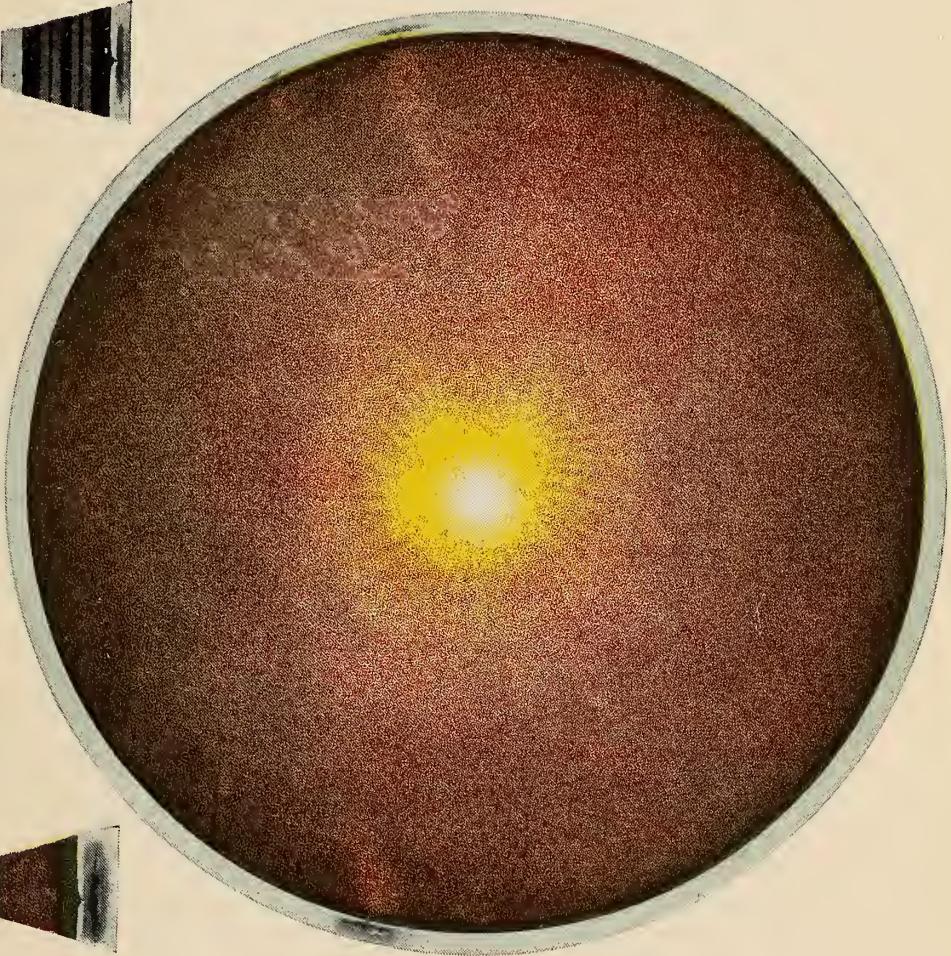
truth of the matter. As a matter of fact a few scientists now admit that a liquid interior is not a tenable hypothesis any longer to account for the earth's constitution.

HOW DID THE EARTH EVOLVE?

The theory which is slowly beginning to gain ground among scientists at the present day is that the earth is a solid mass which Lord Kelvin has described as being "more rigid than glass," with its densest materials at the center. But his theory also carries with it certain inconsistencies, and so it has not been generally adopted, as reference to the current text-books in our schools will show.

In most, if not all, of our schools today, the theory is being taught that the earth is a molten ball which has solidified on the outside, but only to a certain depth, and the center is a molten mass of lava only too ready to burst forth in the form of volcanoes.

The orthodox astronomers tell us that the planetary system, of which the earth is a part, is the condensation of a nebula. According to them the nebula was at first indefinite in form and motion, and then gradually took on a spiral form and a circular motion. By this process it gradually formed a central nucleus of glowing vapor and an outer envelope. This central nucleus they say condensed down into our sun and the outer



A sectional view of the earth's shell, showing that volcanoes originate in small lakes of molten material located near the surface.

A sectional view of the earth's interior, showing a volcano being fed from the great internal ocean of liquid lava according to the old but very illogical theory.

This view shows the earth's interior as an ocean of molten lava approximately 7,800 miles in diameter, enclosed within a rigid crust 100 miles thick and surrounded by an atmosphere 200 miles in depth, according to the hitherto generally accepted but very illogical theory.

envelope broke up into fragments, each of which took on the spherical form by its own centripetal attraction and afterward condensed itself to a planet.

HOW THE NEBULA CONDENSED

Now, in my theory, I recognize the validity of this description with an important difference. I see the spiral nebula; I see its central nucleus and its outer envelope, but I claim that the nebula did not contract and break up into a solar system, but was evolved into an individual planet. In other words, every planet in our solar system originally was an independent nebula which, in the course of time, condensed and took its place with the others that are held in the solar system by the attraction of the sun which is at the center of all their orbits.

As I see it—and I am not speaking without strong confirmatory evidence to be developed later—what occurred was this: The condensation described by the orthodox astronomers took place. The outer envelope, which was finally evolved into the crust or shell that surrounds the central nucleus of each planet, was formed of soluble matter thrown off by centrifugal action from the central nucleus in such manner that the envelope collected around the central nucleus at an equal distance therefrom, except in the vicinity of the polar regions. But the

envelope did not expand or extend to these points because the centrifugal action became less effective proportionately from the equatorial line or widest part of the spherical envelope.

It is very probable that the adverse effect of the reduced centrifugal action near each axis of the new planet was, however, sufficiently offset by the tendency of the envelope to oscillate at each of its polar extremities during the earlier stages of its formation. Thus the attractive power of the particles of the matter of the envelope upon one another, and the gradual hardening of this matter as the envelope passed from a gaseous to a liquid and then to a semi-solid and lastly to a solid condition, finally formed the polar openings described in the succeeding pages. Meanwhile the central nucleus has condensed into a sun that illuminates the interior of the planet and whose light streams out of each of these polar openings.

AN EARTH WITHOUT POLES?

In other words, I claim that the earth originally was a mass of nebulous matter projected from a nucleus in the form of a spiral which, through centrifugal action, evolved itself into a central nucleus surrounded by a wall or ring of nebulous material that was gradually condensed and cooled until it became a new planet with its central sun and polar openings, as is clearly

shown in the illustration on page 21. Such a configuration as that, is I believe—and shall endeavor to prove—the real one of the earth and of every other planet as well.

It is only natural that such a revolutionary theory as this should be greeted with skepticism, but much of this skepticism is founded on misunderstanding of the theory.

The first and most obvious objection—apart from the dogmatic assertion of the older notions which I have already discussed—is that polar exploration has demonstrated that the old idea of the solid polar caps is correct because the poles have been attained and no such polar openings were discovered as are there according to my theory. This objection, however, is based upon a profound misapprehension of my argument. I claim that polar exploration really goes to support my theory, and I shall quote from the narratives of the chief explorers themselves, many facts and records of observations which substantiate this view.

WHAT DID PEARY DISCOVER?

But why, the reader may ask, did not Peary and other explorers find this great polar opening in their Arctic journeyings. The reason is very simple and can best be indicated by asking another question: Why did not man discover, by looking around him, that he was living on

the surface of what is, practically speaking, an immense sphere? And why did he for centuries think the earth was flat? Simply because the sphere was so large that he thought it was a flat surface, and that he should move over the surface of it appeared so natural that, when he was first told that it was a sphere, he began to wonder why he did not fall off—as he had no conception of the law of gravity.

WHY WE WOULD NOT FALL THROUGH

Now, in the case of the polar explorers, the same thing is true. They sail up to the outer edge of the immense polar opening, but that opening is so large that the downward curvature of its edge is not perceptible to them, and its diameter is so great that its other side is not visible to them. And to the reader's further error that they might "fall over the edge" I answer precisely as the scientists answered the people who wondered why they did not fall off the earth when they first heard it was a sphere: The force of gravity holds us in both cases.

But, whereas, we are accustomed to think that the force of gravity pulls us toward the center of the earth, because we think it is solid, as a matter of fact there is, instead, a continuous force of gravity throughout the shell of the earth; and its "center," if we can still use that term, is in the center of the earth's crust, dis-



Photographed at Lick Observatory

A ring nebula as evolved from masses of nebulous matter thrown off by a spiral nebula during centrifugal action and which will finally evolve itself into a new planet with its central sun.



Photographed at Yerkes Observatory, January 3, 1912

A spiral nebula showing the central nucleus projecting masses of nebulous matter which forms a ring or wall around this central body, as clearly shown in the accompanying reproduction of a ring nebula.

tributed equally throughout its whole area, and therefore working equally in all places.

This gravity therefore holds us down to the surface of the earth on whatever part of it we may be, and, as we journey up to the polar opening, around the immense curvature of the earth's crust and in along the interior surface, we are still held down to the surface without noticing any difference. It is this pull of gravity, coming equally from all directions, that also holds the central sun in its position in the center of the hollow earth.

TWO WORLDS IN THE MAKING

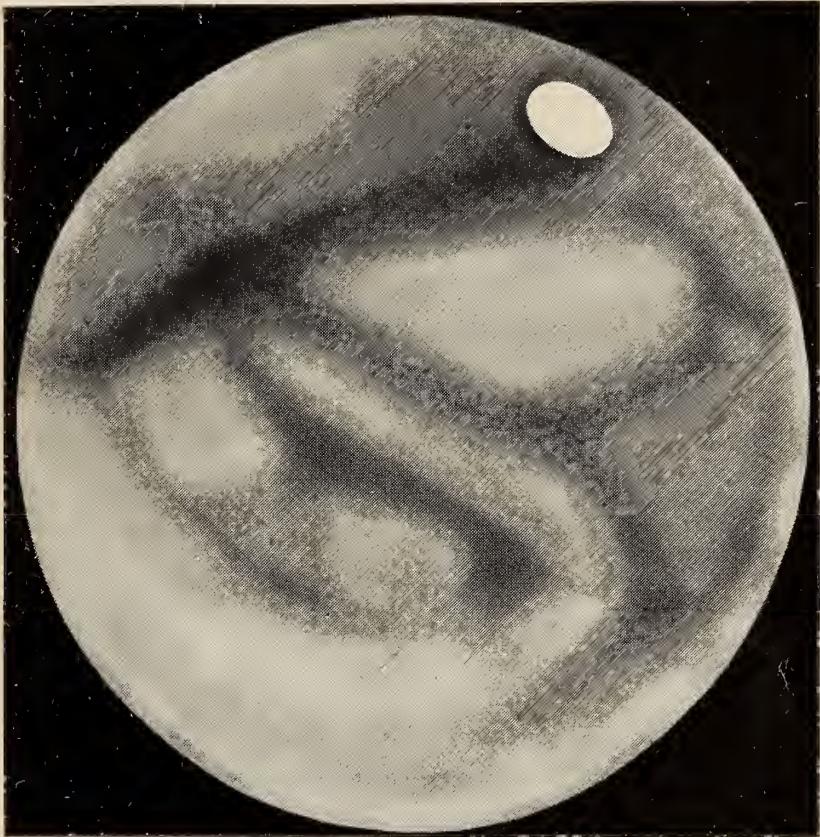
Additional evidence to support my theory of the formation of the earth and all planetary bodies from distinct nebulae also appears in photographs (see page 21) of the two nebulae known as the Spiral Nebula in Canes Venatica and of the Annular Nebula in Lyra. It will be observed as a striking fact that the former has almost divided itself into a wide circle of glowing vapor and a central nucleus, while the latter nebula has progressed somewhat farther in evolution and the separation is nearly complete. The Annular Nebula in Lyra, therefore, appears as a central nucleus surrounded at a uniform distance by a ring of nebulous matter bulged at the center like the waist of a barrel. In this latter form the central

nucleus is more condensed than in the spiral nebula, and the enclosing ring which, of course, we see only in section in astronomical photographs, is gradually assuming a spherical shape, leaving an opening at each polar extremity. These openings, as the mass liquifies and then solidifies, will shrink and define themselves more and more clearly. In this manner, then, do the earth and the other planets come to assume the form which my theory ascribes to them and which direct observation proves to be the case.

FOR PROOF, SEE MARS

By direct observation I refer to the accompanying reproduction (see page 25) of an astronomical photograph of the planet Mars, magnified sufficiently to show the general features of one side of this planet's surface, and especially one of its so-called "polar snow-caps." For want of a better explanation the theory universally held among scientists at the present time is that this disc of brilliant white indicates a frozen polar region similar to those regions which scientists imagined were at the polar extremities of the earth.

Before blindly accepting this view as being the correct one, however, let us inquire into a few of the details disclosed by telescopic observation of the polar regions of Mars.



View of Mars, showing the circular white spot which is an entrance to this planet's interior, instead of the so-called polar ice cap, thus proving that Mars, the earth, and all other planetary bodies of the solar system are hollow and contain a central sun. (Photographed by F. A. A. Talbott, Beighton, England.)

Suppose, instead of looking at this reproduction, we were gazing at the object itself through a telescope. We would then be able to see far more distinctly something which we can observe on the reproduction here shown. That is, the "polar snow-cap"—as we may call it for the present and until its true nature is demonstrated—is far brighter than any other section of the planet's surface, including those portions which are also covered with ice and snow. In reality the brilliancy extends beyond the surface of the planet and this fact strikes us as being a very difficult thing to explain upon the assumption that the disc represents a surface of snow.

MARS HAS NO POLAR ICE CAPS

For additional information upon the subject let us refer to the reports of Professor Percival Lowell who made an historic series of observations from the Flagstaff Observatory in Arizona and who is, perhaps, the greatest living authority on Mars and its mapping out.

He tells us, in his book entitled "Mars," that, as he watched this disc night after night, he observed its surface change color in a most mysterious manner and, in 1894, great shadowy hands were seen to stretch themselves across the surface of Mars' "south polar snow-cap." These bluish bands occasionally widened out into what seemed islands of color

in the midst of the general whiteness and, at times, these bands were so numerous that he was able to draw a map in which almost half of the whole circle is obscured by cloudlike bodies. But a more startling observation was in store for Professor Lowell.

MARS MUST HAVE CENTRAL SUN

On June 7 of the same year (1894) he saw suddenly flash out in the midst of Mars' "polar snow-cap" two intensely brilliant starlike flashes of light which twinkled for a few moments and were then again obscured. Nor was this an accidental happening due to some trick of the atmosphere for N. E. Green—one of the earliest astronomers who also mapped out the planet Mars—observed in 1877 at Madeira, a single starlike gleam appear for a moment in the midst of the "polar snow-cap"—and Green himself had been preceded in the observation of this phenomenon by Mitchell, another astronomer, as far back as 1846.

Now, there are two notable observations to be made of this phenomenon. The first is that a star's gleaming, or any other source giving a direct beam of light, is quite unthinkable as coming from a solid surface such as a snow-cap would be; and the second observation is that this beam is not a fixed thing such as would be cast by an illuminated peak or lighthouse, but is only

observed at rare intervals, the intervals in its actual observation from earth being, as we have seen, from 1846 to 1877, and then not until 1894.

What, then, is the real explanation of these facts which have hitherto never been satisfactorily explained? Simply that the north and south polar circles of Mars are—as they are on earth—large openings through which gleam the rays of the central sun of that planet, those rays giving the alleged “polar snow-cap” the extreme brightness which it possesses and which is not possessed by the surfaces that merely reflect the light which comes to Mars from other planets and which is, therefore, much dimmer than any light would be which came from a source within the planet itself.

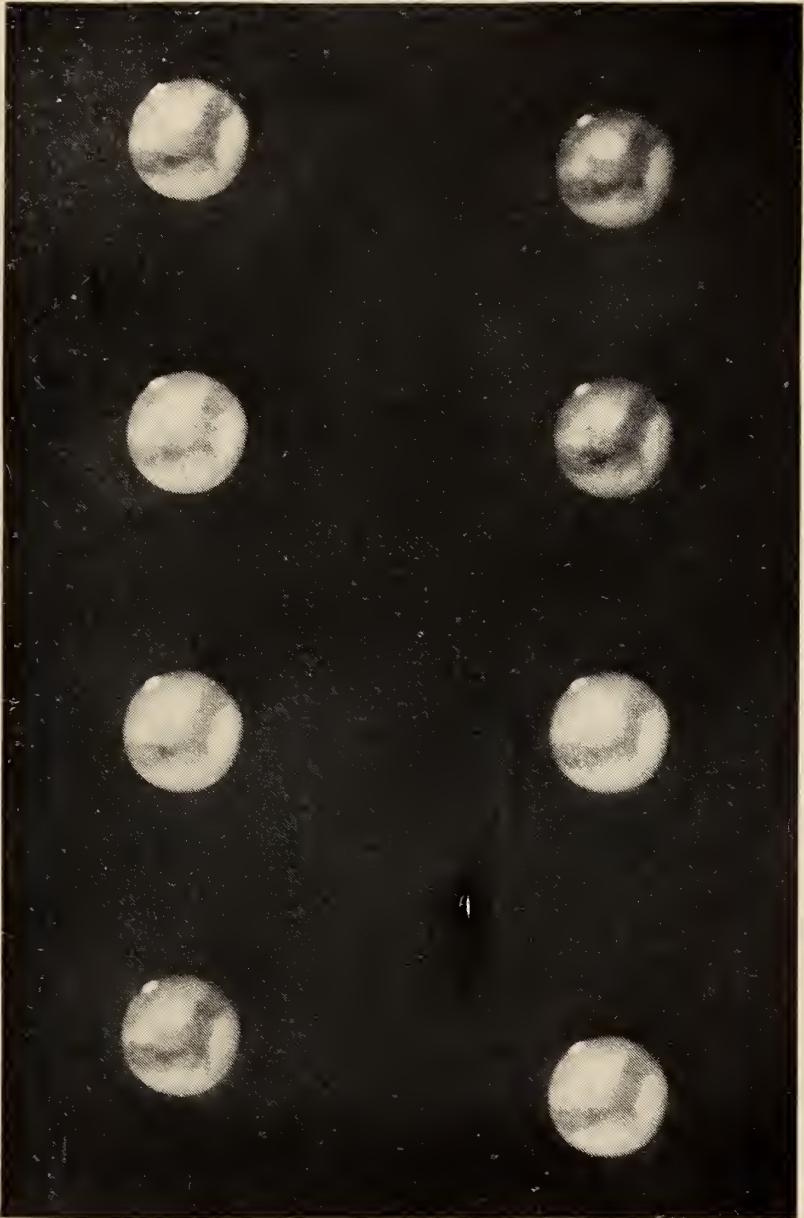
CLOUDS INSIDE A PLANET

On this basis, too, can be explained the periodic cloudings and streaked appearance of the “polar snow-cap.” The interior of the planet will naturally be very cloudy as the inner sun is shining and evaporating the inner surface water all the time, and the formation of these clouds and their rotation from side to side of the planet (for they would naturally have this tendency just as the sea currents tend to rotate about the outer surface of the earth) will cause these clouds to emerge through the polar openings and cast the very shadows which Professor

Lowell describes in his book in so much detail. In other words, those shadows are direct ocular evidence of clouds which came from the interior of what has hitherto been supposed to have been a solid planet. And may it not be possible for those clouds to become so dense as to entirely obscure the "snow-cap," thus accounting for its apparent absence during certain periods?

MARS' CENTRAL SUN IS SEEN

But even more direct ocular evidence—in fact the evidence of the central sun itself—is given us by the observation of that gleam of direct light which two observers saw as a single gleam and which Professor Lowell saw duplicated, probably owing to its being split in two by a slight cloud mass. A gleam of light presupposes a source from which it comes and those gleams—only observable at rare intervals, when the south polar opening of Mars is on a direct line with the earth—could have been nothing else than direct beams of light from the central sun of Mars. If the light were from an outside or reflected source it would certainly be observable at a much greater variety of positions than were these, and it would be a far more diffused and milder light than the concentrated and sharp beams which Professor Lowell describes as being not only bright, but "dazzlingly



Views of Mars taken at the Yerkes observatory, Sept. 28, 1902, showing the white circle or so-called snow-cap, projected beyond the planet's surface, which precludes all possibility of its being snow or ice.

bright," and which even illuminates beyond the surface of the planet.

THE SHADOW OF THE POLAR OPENING

If the reader will look again at the polar "snow-cap" appearing on the photographic reproduction of Mars he will observe a dark ring around it. According to my theory this ring is easily explained as the shadow caused by the downward curving of the circumference of the polar opening. But, prior to my explanation, it has been the cause of much uncertainty among astronomers.

The appearance of this shaded ring, and the changes of brightness which he observed in the so-called polar "snow-cap" itself led Professor Lowell to claim that he had discovered on Mars what explorers of earth had long expected to discover some day at the earthly poles, viz., an open polar sea. I have not the slightest doubt that the noted observer of Martian conditions is partly right in his observations, but I claim that the so-called "Sea of Ancient Ice" which used to be marked on our polar maps is, in fact, not a sea of ice at all, but an open polar sea surrounding the polar opening.

WATER ON MARS — WHERE FROM?

The reader of Lowell's observations of the changes observable by telescope around the

Martian polar "snow-cap" must admit that Lowell has discovered water there, but where does this water come from? We know that the surface corresponding to seas on Mars are dry deserts most of the time, and that the whole case which Lowell makes out for life on Mars rests upon the presence there of artificial canals which carry the water from the polar regions over the surface of the planet.

I do not wish to enter into this canal controversy, but, if the amount of water on Mars is so small by this time that it has to be carefully drawn from the polar regions in canals—as if it were a precious liquid—and if all the water which once filled the seas has been, by this time, absorbed by the planet or evaporated into a drying atmosphere, then there would no longer be a water supply for Mars' polar "snow-caps." The fact that there is open water there any way, and enough apparently to supply a canal system, is proof positive that the water has a source, and that source can be no other than an interior Martian surface lighted by a central sun whose rays we have seen to be observable at times. This interior surface would naturally be provided with vast seas and rivers and able to supply, through the polar openings, the overflow of water which is undoubtedly there and which cannot be accounted for in any other way than that which I have here laid down.



The earth as it would appear if viewed from a great distance, showing the north polar opening to the planet's interior which is hollow and contains a central sun instead of an ocean of liquid lava.

It would, therefore, seem that the ingenious theory of canals on Mars was only tenable if its author were willing to admit that Mars is hollow and that the so-called "snow-caps" of Mars are immense openings leading into the interior of the planet. But, on the earth itself, there is abundant evidence in support of my theory.

WHAT DOES THE OPEN POLAR SEA MEAN?

As we have already seen in the considerations adduced above, an open polar sea is something which is more than mere supposition. Greely, Nansen, Kane and Peary have all spoken of the indications of this as they have observed them in their voyages. At a certain point in their explorations many Arctic explorers have encountered a gradual breaking up of the ice, due to rising temperatures and finally found themselves surrounded by a large body of open water.

In the first volume of his "Farthest North," Nansen has quite a lot to say about this finding of clear water as he proceeds northward. Near the end of his second volume he even speaks of mists coming from the far north—a sure sign of the existence of a warmer region. On page 227 of his first volume, Nansen tells us how his course gradually became freer from ice as he headed northward. When he reached $75\frac{1}{2}$ degrees north he still had "open water and dark

sky to the north and west." The dark sky it may be explained is an indication of open water for many miles ahead, as a surface of ice is always reflected in the sky, to which it gives a light color. A page or two further on Nansen describes his course as "on the north, steadily north with a good wind, as fast as steam and sail can take us, and open sea mile after mile, watch after watch, through these unknown regions, always clearer and clearer of ice, one might almost say: 'How long will this last?' The eye always turns to the northward as one paces the bridge. It is gazing into the future. But there is always the same dark sky ahead, which means open sea." A little later he says: "We saw no land the whole day but we had fog and thick weather all morning and forenoon."

NANSEN IS BAFFLED

Shortly after that Nansen made fast to a large ice floe which he imagined to be the advance guard of the solid polar ice, but it evidently was not, for three weeks later he was still drifting north with this floe through a lane of clear water that stretched clear to the north with the customary dark sky indicating its indefinite extension, and Nansen refers to the situation as "extraordinary." Furthermore, he found at this point that he was in the grip of a south-going current when, according to all his theories, a

north-going current should have been encountered. He says (page 201): "I do not understand this steady drift southward * * * What can be the reason of it? With all my information, all my reasoning, all my putting of two and two together, I cannot account for any south-going current here—there ought to be a north-going one. If the current runs south here, how is that great open sea to be explained over which we steamed across in a northerly direction?"

THERE WAS NO ICE IN THE NORTH

The reader is asked to note here that this south-going current carried no ice with it, proving that it came from a source where there was no ice, and not from the traditional north pole covered with eternal ice and snow. Of course we cannot undertake here to explain just where Nansen was. He admits that the drift of the various currents and other factors were such that he was not sure of his precise position, but it is very probable that he, as well as other explorers in the north, were actually sailing around and over the great lip of the northern polar opening.

Kane gives us even more dramatic evidence than Nansen. In the account of his second Arctic expedition he speaks (page 309) of observations made on Cape Independence, latitude

81 degrees 22 minutes north. At a height of 500 feet above the sea level no ice could be seen in a northerly direction; the channel approaching the cape was free from ice, and the coast-ice along the sides of this channel had been "completely destroyed by thaw and water action, while an unbroken belt of solid ice extended to the south." The explanation of that is obviously the coming down of warmer water from the north. It so happened that Kane had no sooner made these observations than "a gale from the northwest of fifty-four hours' duration brought a heavy sea from that quarter without disclosing any drift or any other ice."

WHERE DO THESE ANIMALS LIVE?

But the far north contains other indications besides warmth which go to show that it is the entrance to a new and more hospitable region than explorers have imagined. The abundance of life which is found there would certainly be a strange phenomenon if the north pole was really what it is supposed to be.

On page 330 of his "Three Years of Arctic Service," speaking of conditions near the 80th parallel of latitude, Kane mentions a long list of animals seen, including traces of hares, lemming, foxes, musk-oxen, bears and ptarmigan. This game, it should be noted, was found in the early summer, and it is the unanimous testimony

of explorers that it migrates to the north in the winter. If that be the case—and it is absolutely certain that this animal life does not come south—there must be somewhere for it to go. As the reader must admit that this reasoning is both logical and suggestive of but one conclusion, let us then follow it up with something that is more than merely suggestive.

MYSTERIOUS PARADISE OF FLOWERS

In 1818 Sir John Ross first reported that certain sections of the extreme north cliffs were so lavishly covered with what was apparently a red snow that the red patches could be seen for a distance of ten miles. The nature of this red material of course excited a good deal of discussion. In Kane's "Three Years of Arctic Service" he mentions seeing these cliffs, and also seeing patches of red snow which had drifted away from them as he thought, and he mentions the fact that the vegetable origin of the coloring matter had been decided beyond dispute by Dr. Robert Brown. The same phenomenon is also vouched for by La Chambre in his "Andree's Balloon Expedition." According to La Chambre: "On the isle of Amsterdam the snow is tinted with red for a considerable distance, and the savants are collecting it to examine it microscopically."

From the foregoing there is no doubt that this vegetable matter is the pollen of a plant, and there are no patches of flowering plants in the Arctic regions which are large enough to give off such enormous masses of pollen as would be sufficient to cover whole regions. As a matter of fact, for flowering plants in such profusion there is required a climate having an abundance of sunlight, as it is only the large branch of the vegetable kingdom which propagates itself by spores, and not by cross fertilization through pollen that grows in sunless regions.

WHERE DID THIS COME FROM?

But the red patches of snow are not the only curious things observed by polar explorers in the Arctic regions. When Greely's men were wintering in the Arctic in 1881 a party of them explored the cliffs near St. Patrick's Bay (Greely, Vol. 1, page 100). Speaking of the exploration of two of the men, Greely says: "In the search, however, Private Connell and Frederick found a large coniferous tree on the beach just above the extreme high-water mark. It was about thirty inches in circumference, some thirty feet long, and had apparently been carried to that point by a current within a couple of years. A portion of it was cut up for firewood, and for the first time in that valley a bright, cheery campfire gave comfort to man."

Now the fact that this was fresh wood, not too saturated with water to burn freely is a most significant one. Where did the tree come from? We have not been told of forests in the Arctic regions by any explorer so far, and the tree was evidently not a relic of any geological times when the polar regions are supposed to have been tropical. Whence then did it come? I think the argument of these pages furnishes an answer to that, as it does to other unsolved problems of the Arctic. But the whole matter is easily enough clinched. There is no need to argue over matters that may be thought refutable by the reader who has been trained in the orthodox ideas about what constitutes the Arctic regions.

THE MAMMOTH AND THE MASTODON

I have spoken of a supposed time when the Arctic regions were the tropical part of the earth. One of the strongest proofs in support of my theory as outlined in the preceding pages has to do with a really wonderful Arctic discovery that is generally explained by invoking the conception of a once tropical region—a conception which I am not affirming or denying at this point. The proof referred to is this: Every reader of these pages is presumed to be familiar with the accounts of finding fossil remains of the mammoth and mastodon—two elephantlike

animals but larger than any known animal of to-day—which inhabited tropical countries in ancient times. The discovery of such remains in the regions near the poles is advanced as proof that those regions were tropical once. But as early as 1806 and at intervals ever since then, something much more remarkable than mammoth bones have been found throughout the frozen north; that is, complete carcasses of these animals in the freshest possible condition have been discovered.

THE MAMMOTH BANQUET

The climax from the standpoint of dramatic interest in these stories came when it was reported several years ago in the newspapers that a professor of St. Petersburg had given a wonderful banquet to a number of his scientific friends in which everything eaten was supposed to have been thousands of years old. Wheat from Egyptian tombs and other preserved products from the ruins of Pompeii and Herculaneum were among the items served, and the *piece de resistance* was fresh steak from the newly-discovered carcass of a mammoth.

I hope to convince the reader in the next few paragraphs that one item in this feast—the mammoth—was not so old as it was thought to be,

but let us first refer to a few well-authenticated facts regarding the finding of these immense quadrupeds.

CORROBORATIVE EVIDENCE

Is the claim that the mammoth are so found, a genuine one? For answer I first quote Dr. Eberhard Frass who used the following language in an article in "Die Woche," Berlin, on March 9 of the present year. The English quotation is taken from the Scientific American Supplement in whose pages it was reproduced in English. The German scientist says: "Mammoth is known to us better than any of its contemporaries, not only from finds of teeth and bone, but * * * by carcasses completely preserved even to the skin and hair, in the Siberian ice." That the flesh of these finds is fresh is sufficiently shown by the fact that it has been eaten at a banquet. That that was not a rare case, but is common, is shown by the facts about to be enumerated.

BETWEEN THE MAMMOTH'S TEETH

We have referred to the first recorded find of a fresh mammoth as being in 1806. That find was made by a Mr. Adams in the employ of the St. Petersburg museum. The carcass was no sooner exposed than bears took the first opportunity to devour what they could reach.

Perhaps the most remarkable case, however, is of the mammoth found by Professor Henz of the St. Petersburg Zoological Museum in 1901 which was so perfectly preserved that its flesh was not only in perfect condition, but its stomach was full of undigested food, and the discoverer even found traces of its last meal between its teeth—and these traces were readily identifiable as vegetable matter because they had not decomposed in the slightest degree.

This statement is so extraordinary as to challenge credulity, and I, therefore, refer the reader to the pages of George Frederick Wright's "Asiatic Russia," where this discovery is detailed in the actual words of Professor Henz himself.

WHY THE MAMMOTH MEAT WAS FRESH

Now what is the bearing of all this upon my theory? Simply this: I claim that it is impossible for an animal living in a sub-tropical region—or even in a region which is bordering on the cold—to fall into a bog or gully and die there and lie there until the climate became such that ice covered the body and then be found to be in a perfectly preserved condition at the conclusion of the entire process of slow refrigeration. I claim that if these animals lived in a certain climate which was certainly not the present one—for they would be living still—

and died by any means, and were afterward encased in ice, they would practically decompose in the interval between their death and their encasement in the ice. Even if this process be assumed to be very rapid; even if we suppose—as some investigators have been driven to suppose—that the mammoth inhabited Siberia after it had become cold, there could not conceivably be such perfect preservation of the carcass as to avoid the decomposition of even the food between the teeth—this particular process being only a matter of hours as the mouth is the seat of great bacterial activity.

WHAT THE MAMMOTH PROVES

I claim that the only rational explanation of these discoveries is that the mammoth was alive after the Arctic regions had reached their coldest, and that the carcasses now being discovered are those of animals which have fallen into ice crevasses after the latter had been formed, and were frozen to death instantly. Only on this assumption can we explain the entire absence of decomposition. But, as these mammoth do not live in the Arctic regions now, they must, therefore, live in the sun-lit interior of the earth. Being by nature wanderers and perhaps, by gradual adaptation, fitted themselves for a colder climate than the sub-tropical (those found in Siberia had thick hair) they have taken to living

near the polar openings. For this reason it is quite possible that they sometimes wander too far from their habitats; become stranded on detached ice floes; or fall into crevasses in glaciers, and are, in that way, carried to the positions in which they have been found by modern explorers. This theory—and this theory alone—fits all the facts of these discoveries.

THE AURORA EXPLAINED

A test of the truth of any theory is found in asking of it whether it solves all the problems arising from the phenomenon for which the theory attempts to account. It must cover, in other words, all the facts in its province.

To show the reader how my theory makes good on that criterion I shall explain one of the standing polar puzzles—the Aurora Borealis and the Aurora Australis—sometimes spoken of as the Northern and Southern Lights respectively.

Suppose we are in the polar latitudes and it is gloomy enough for the lights in the sky to be seen clearly. Suddenly we notice in the sky a burst of pale gleams of light which may point toward the zenith in great arrowlike beams parallel to one another, or may diverge like the rays of the sun, and alternately fade and increase in brightness, pass out altogether, rekindle, waver, undulate, and altogether give a varied display

of intensity and change of position. Often the beams are in the form of a curtain, which seems to undulate and waver as if a breeze were blowing upon it. Sometimes the rays stream out in the form of a corona; sometimes they are reddish in hue and, at other times, colorless; often a strawlike color characterizes them.

ELECTRICITY DOES NOT EXPLAIN

Now the orthodox explanation of these occurrences is that they are caused in some mysterious manner by electricity, but just how, nobody pretends to be able to say. No theories advanced thus far on the subject have given universal satisfaction, which is not surprising since they are based on a fundamentally false conception. As a matter of fact, by observation the aurora is always confined to the polar region; several explorers have noted that it did not affect the magnetic needle when it occurred; we have seen that its color varied constantly, and that it lasted for varying periods of time. Therefore it is obvious that such a manifestation is to be attributed to a source other than electricity and, on my theory, we have all the material, to account for this phenomenon.

THE CENTRAL SUN'S CORONA

According to my theory the central sun of the earth is surrounded by a corona whose color and

activity is similar to the corona which surrounds the outer sun and which is observable through an astronomical telescope. Some of the variable beams of light from the corona of the interior sun naturally pass through the polar openings when not prevented by interior clouds. If the outside of the earth is in brilliant sunlight and no clouds are present above the polar openings it is evident that no aurora will be observed. But suppose these beams of light from the interior sun come out through the polar opening when the earth is shrouded in gloom, and when there is a cloudy or dense condition of the atmosphere at a certain height above the polar opening? Then these beams will be reflected upon the layer of dense atmosphere and, according as conditions vary in the upper and uninterrupted air, and also as they vary in the atmosphere of the interior through which the beams pass on their way to the polar openings, so will the manifestations of the aurora, vary in brightness, color, duration, apparent height from the earth, and depth.

WHAT MAY BE SEEN IN THE EARTH'S INTERIOR

Having submitted in the foregoing pages what I consider is evidence ample to support my theory of the manner in which the earth and all planetary bodies of the solar system were

evolved from nebulae into hollow spheres, each containing a central sun and having two polar openings, and having also discussed at length the phenomenon and other physical conditions peculiar to the polar regions, let us now turn our entire attention once more to the interior of the earth and ascertain what may be found there, according to my theory, by taking the following imaginary journey.

Starting, let us say, at the Arctic Circle and proceeding northward over any one of the several routes already traversed by polar expeditions, we finally reach the point marked A in the diagram shown on page 55. From this point onward and around the semi-circle to the point marked D there are observed, as has already been recorded by polar explorers, an increasing number of certain changes and manifestations peculiar to this region, such as the Aurora Borealis; the ice pressure observed during still tide and calm weather; the rising temperature and rapidly diminishing quantity of ice encountered, as one travels toward the supposed actual site of the pole, until open water entirely free from ice surrounds the voyager; the presence of a south-going current of water instead of one flowing northward; the large tracts of snow and ice covered with flower pollen when there are no patches of flowering plants in the Arctic regions large enough to give off such enormous

quantities of pollen as would suffice to color large areas, and when the nearest trees and floral growth on the exterior surface of the earth are hundreds of miles distant; the sudden arising of terrific winds when the sky is clear; the air which is sufficiently warm to form an almost continuous fog; the finding of certain migratory animals, including traces of hares, foxes, lemming, bears, and musk oxen, which could not possibly have come from warmer lands in the distant south across the immense fields of ice; and last, but not least, by any means, the discovery of extremely well-preserved bodies of mammoth in icebergs when this animal is supposed to have been extinct for 20,000 years and icebergs in these regions cannot possibly remain intact for that length of time.

WHY THE NEEDLE DIPS

All these and many more so-called incomprehensible things relating to the polar regions, including the true location of the center of gravity and the peculiar action of the compass that has been recorded by explorers when in these latitudes, I have above attempted and will hereafter endeavor to explain in a manner that should carry conviction and enable the reader to gain a clearer conception of phenomena and conditions within the polar regions of the earth.

Having reached the point marked "D" on the

diagram, we are now half way round the semi-circle, or at the apex of the earth's crust or shell. Here the magnetic needle of the compass is seen to dip and oscillate in a peculiar manner, owing to its being directly opposite to the point marked "I," where the magnetic force is focused in the same manner as the magnetic properties of an ordinary horseshoe magnet are strongest at the end of either pole.

FIRST VIEW OF THE CENTRAL SUN

At the point marked "D" we are able to catch our first glimpse of the corona that surrounds the central sun of the earth, because this sun is, according to my theory, approximately only 3,300 miles distant from that point. Therefore it appears reasonable to believe that the corona could be seen and would have the appearance of a sun rising above the horizon under favorable atmospheric conditions.

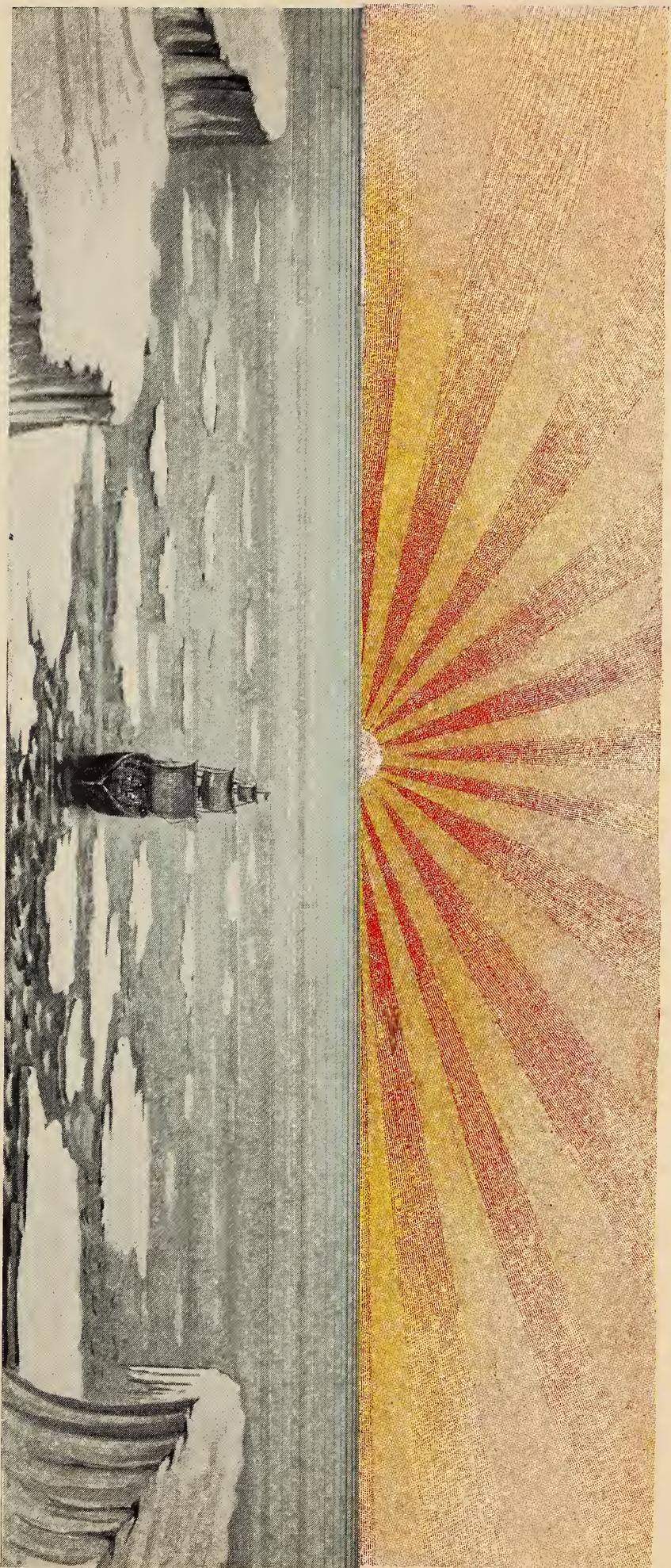
Continuing our journey around the semi-circle of the earth's crust and, in reality, having pursued a downward or southerly course since leaving the point marked "D," we arrive at the point marked "E." Here, according to my theory, it is possible for us to see the central sun in its entirety, and to realize that we are actually gazing upon the source of life and energy of an interior world, similar to our own, and but 800

miles distant from us through the earth's crust or shell.

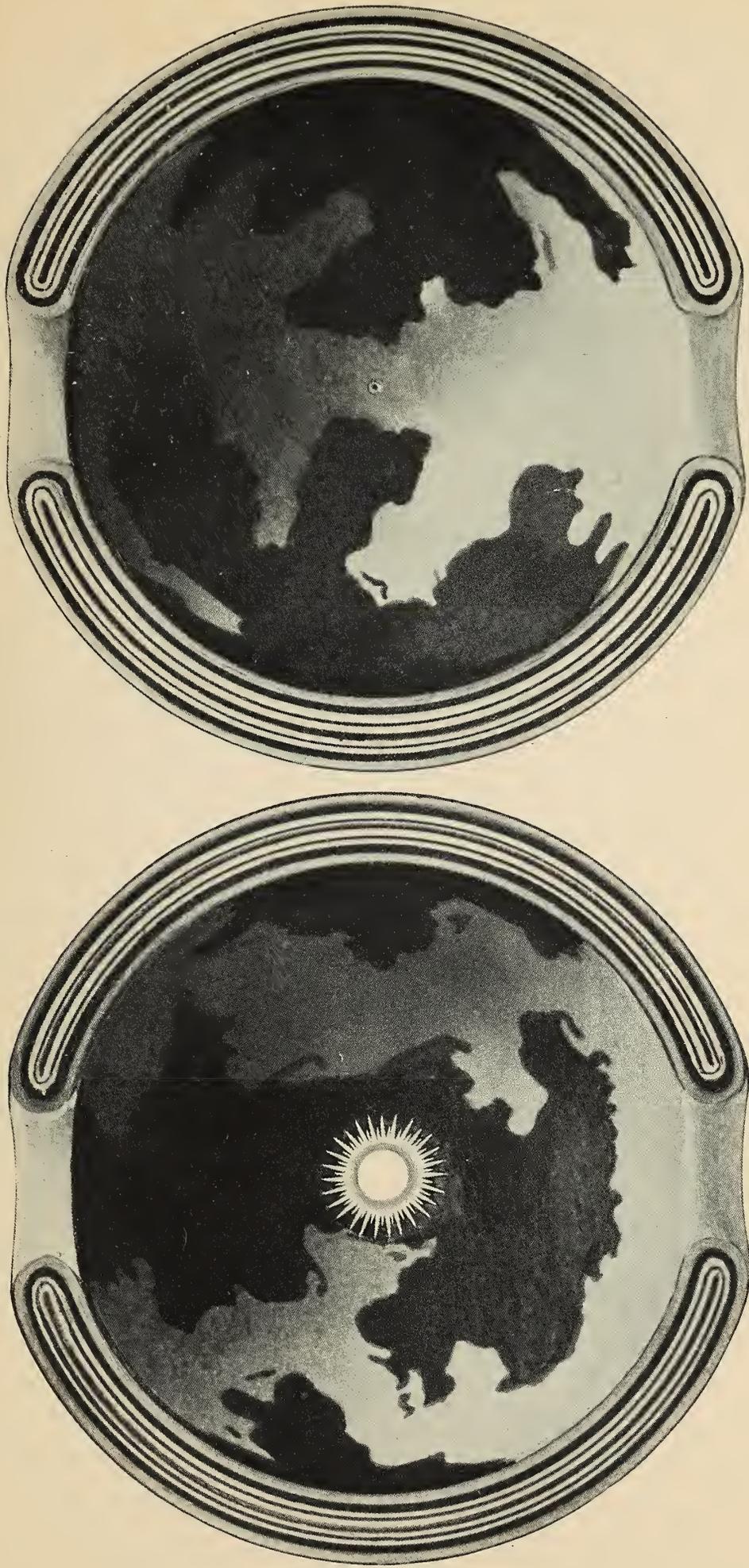
As we leave the point marked "E" and continue downward, the central sun will appear to be rising farther and farther above the horizon until, at last, it is directly overhead or in the zenith. At this point we will have traversed the entire semi-circle of the earth's crust or shell and actually have reached the interior surface of the earth, after having traveled 1,200 miles from the point marked "A" on the diagram, or the exterior surface of the earth.

NO NIGHT NOR SEASONS

Resuming our journey southward upon the interior surface of the earth, it appears reasonable to believe that, as I have no evidence to the contrary and much to support my theory of a central sun, we shall, with one important exception, find conditions somewhat similar to those upon the earth's exterior surface. The exception noted is that the position of the interior sun remains unchanged in its relation to the earth; consequently there is no night or change of season within the interior of the earth. It is quite evident that a condition of this kind would be productive of all forms of both animal and plant life to a much higher degree than obtains on the outside of the earth with its four seasons and extreme changes of temperature in certain zones.



The central sun as it would appear to an explorer when he had reached the spot indicated by the letter "D" on the diagram, if the atmospheric conditions were favorable.



Showing the earth bisected centrally through the polar openings and at right angles to the equator, giving a clear view of the central sun and the interior continents and oceans. (Reproduced from photograph of working model.)

On account of this equable temperature it is apparent that the central sun provides the means necessary for propagating vegetable life to a more luxuriant degree than is possible on the exterior surface of the earth; that the various species of land animals which may be found on the interior surface are, through the action of the central sun upon the interior plant life, developed to a more prodigious size as a result of the more abundant vegetation; and that this excessive growth is due to the increased amount of moisture formed by the interior sun's uninterrupted radiation.

THE NATURE OF LIFE IN THE INTERIOR WORLD

Although it is not the purpose of this article to discuss other than probable facts in connection with and supported by my theory of a central sun, let us pause to speculate upon the nature of phenomena and life that may be encountered in this interior world. Here exists one unchanging season and a continuous period of daylight, except when certain parts of the earth's interior surface may be partially obscured by intervening clouds or mists raised by the sun's constant rays. Here the heat emanating from the central sun does not materially affect the temperature to such an extent that either animal or plant life is placed in jeopardy, be-

cause any abnormal condition of this heat would be dispersed or modified by intruding currents of cold air through either or both entrances to the earth's interior.

Here, indeed, we may expect to find a new world—a world the surface of which is probably subdivided, like ours, into continents, oceans, seas, lakes, and rivers. Here, through the heat of the interior sun, plant life may exceed in size and luxuriance any vegetation that ever grew upon the outside surface of the earth. Here may be found strange animals of every description; some of them even larger, perhaps, than the prehistoric mammoth or mastodon, on account of the abundant supply of vegetation, and others of species unrecorded by zoologists. Here, also, may tread the feet of a race of people whose existence is entirely unknown or hitherto unsuspected by us. In fact the existence of an interior world, such as described, leads us to consider possibilities as infinite in number and character as those suggested at various times by eminent astronomers and other learned students of the planets adjacent to the one upon which we live.

THROUGH TO THE SOUTH POLE

Therefore, let us return from the realm of idle speculation regarding the phenomena and life that may be encountered in this unexplored re-

gion and continue our journey southward upon the earth's interior surface until the semi-circle at the southern polar opening is reached. Here it is probable we shall find that conditions are practically the same as those encountered when the central sun was first observed by us to be in the zenith. As we proceed around the semi-circle of the earth's crust, however, the sun will appear to be going down behind us until, at length, it disappears altogether below the horizon as we finally reach a point corresponding to "D" on the semi-circle traversed when entering the earth's interior through the north polar entrance.

Until more data concerning the central region of the Antarctic Circle is obtained than already have been recorded by others, I am warranted in claiming that conditions there will be found to be, with probably a few minor exceptions, similar to those within the central region of the Arctic Circle. For this reason the remainder of our journey through the southern entrance to the earth's exterior surface will doubtless not be unlike that to the interior of the earth through the northern entrance. Having completed our journey and emerged through the south polar opening, I respectfully submit herewith certain additional observations in support

of my theory that the earth is a hollow sphere with two polar openings and contains a central sun.

HOW OTHERWISE EXPLAIN ARCTIC MYSTERIES

Unless the earth does contain a central sun which produces and maintains vegetation, the origin of coal, wood, pollen from plants, etc., found by explorers upon the ice and snow within the Arctic Circle must forever remain a mystery, as it is admitted that such products of vegetable life could not have been carried toward the polar region when the ice is constantly moving away from it, and the nearest trees on the exterior surface of the earth are hundreds of miles distant from the localities where these material evidences of plant life are discovered.

As the quantity of ice diminishes rapidly as one travels toward the polar regions, until an open sea is encountered, it is evident that there must be a source of heat for producing an increase in temperature, and this source cannot be other than a material sun in the center of the earth.

As terrific winds suddenly arise within the assumed locality of the poles when the sky is clear, it is apparent that hot air must be supplanting cold air somewhere within that region, and such a change can be ascribed only to currents of cold air rushing into the polar openings

to modify or disperse the heat produced by an interior sun. As the air within the immediate vicinity of the so-called poles possesses sufficient warmth to form an almost continuous fog, it is evident that heat sufficient to produce this condition must come from within the earth through an opening in the earth's crust or shell, as the rays of the exterior sun do not strike the region so affected.

As there have been found within the polar regions, certain migratory animals, which could not possibly have come from the more temperate lands in the distant south across the Arctic fields of ice, the presence of these animals can be explained only by admitting that they originally inhabited the interior of the earth and migrated through the polar opening to the place where found.

Unless the earth is a hollow sphere into which entrance may be had through an opening within each polar region, no plausible explanation of the peculiar action of the compass, that has been recorded by explorers when in those latitudes, can be advanced. Admitting that such polar openings into the earth's interior do exist, then the dipping of the compass needle is readily explained by stating that the compass was at the apex of the earth's crust or shell, or midway around the semi-circle where the north pole of gravity is located; consequently the needle

would dip until the compass had been carried past the apex of the earth's crust, or farther into the polar opening, when the needle would gradually assume its natural position.

AN EXPEDITION TO OPEN UP
THIS REALM

Such in brief is an outline of my theory of the interior of the earth. If it be true, an expedition of scientists who penetrated the great ice barriers of the north or south would find a warmer climate beyond them, with open water to carry them over the lip of the aperture into the earth's interior. Here they would find land and water like our outer surface, but the land would be warmed by a perpetual sun instead of by a periodic one. Hence the vegetation would be far more luxuriant than on the earth's exterior surface and it would naturally support a larger animal population. Our explorers would sail or go overland as conditions warranted right through the length of this interior and come out at the other polar orifice.

Numerous polar expeditions have been made, both by private interests and those fostered by governments, each costing thousands of dollars and many lives. The scientific world expected much to result from those various expeditions, especially from the discovery of the North and South Poles respectively. Their alleged discov-

ery is now a matter of history, and yet the phenomena of the Aurora Borealis and the Aurora Australis and many other problems mentioned in the preceding pages of this book, are still a mystery and will remain a mystery if we cease our efforts to get at the facts. The whole truth apparently has not yet been revealed.

The former illogical theories have been taught and accepted for the lack of better ones. The results gleaned from all polar expeditions thus far, have been tabulated and analyzed, and yet many important questions remain unexplained and unanswered. The world is still hungering for the truth. Can we afford to drop the matter now, with the search for the truth only begun? Rather — let my theory be the beacon light for all future expeditions.

With the advent of air navigation let us continue to improve and perfect this mode of travel, which will be the means of overcoming the almost insurmountable obstacles encountered by former explorers. This mode of travel can be made successful, safeguarding it by the establishing of permanent stations for provisions and repairs, at convenient intervals, thus enabling a party of scientists to negotiate the dangerous barriers of ice, direct to — and through the polar openings — through the interior of the earth and thus prove this newest and most logical theory of the earth's formation.

If explorers from the United States were to achieve this feat, the glory to this nation would be immense. If any nation were to attempt it, and if the discovery were to be followed by justice in the use of the new domain, justice to any inhabitants it might be found to shelter, as well as justice between the nations that might want to take advantage of its resources, then a new chapter would be begun in the world's history.

DISCOVERY OF INTERIOR MAY
BE PROVIDENTIAL

While we have not yet exhausted the resources of the outside of the globe, we can see in imagination the time—not far distant—when the outside will be too thickly populated and too thoroughly drained of its resources. Thus the discovery of the new continents may be due to be made at a providential time. At all events I think the prospects are sufficiently interesting to justify me in calling upon men of science of public spirit everywhere—throughout the United States as well as throughout the world—to take this matter up; to discuss it thoroughly and without prejudice; to get behind the idea and push it; to interest their friends in it; to look forward to, and to help forward any movement such as an American expedition or an international expedition, to verify and map out

the discoveries here predicted through the means of reason and observation. The time is ripe for such a move. It should be made in a spirit of friendliness between the nations involved, and should be free from national jealousies and the desire of gaining undue advantages.

I call upon every reader of this book who is convinced of the truth of my arguments to enlist in this crusade for the discovery of a new world.

THE END

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